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U. S. FOREST PRODUCTS LABORATORY
MADISON, WISCONSIN

LIST OF PUBLICATIONS JULY 1 TO DECEMBER 31, 1945

Publications available for distribution at the Laboratory are marked with an asterisk (*). Blanket requests for publications will not be filled. Publications not marked with an asterisk are available as noted after the title.

Trade journals and magazines referred to, if not available in your local library, may be obtained from publishers listed on the last page.

Chemistry of Wood and Derived Products

Industrial alcohol from wood waste, by E. E. Harris. South.

Lbrman., 171(2153):244-46, 48, Dec. 15, 1945.

Describes new wood-waste alcohol process requiring one-sixth the time and three-fourths the acid and steam of best previous processes. Methanol and furfural are recovered as byproducts. Proposes fodder yeast from unfermentable sugars to further increase efficiency of the process. Research continuing on use for lignin residue.

Glue and Plywood

*Durability of glue joints between blocks of compreg and of compreg and wood, by H. W. Eickner. FPL Report 1536, Aug. 1945.

Presents block-shear test results showing effect of exposure to various temperature and humidity conditions on the quality of glued joints of compreg-to-compreg, compreg-to-maple, and compreg-to-spruce made with two types of compreg and four types of resin glues.

*Durability of papreg-to-papreg and papreg-to-birch glued joints, by H. W. Eickner. FPL Report 1538, Nov. 1945.

Presents shear test results showing the effect of exposure to various temperature and humidity conditions on the quality of papreg-to-papreg and papreg-to-birch joints glued with preserved casein, cold-setting urea-resin, room-temperature resorcinol, and acid and alkaline intermediate-temperature phenol glues.

*Durability of room-temperature-setting and intermediate-setting resin glues cured to different degrees in yellow birch plywood, by J. M. Black and H. D. Bruce. FPL Report 1537, Nov. 1945.

Presents data on joint strengths of birch plywood, glued with phenol, resorcinol, melamine, and fortified urea-resins, each cured to several different degrees as estimated by the solubility of the cured films in water when exposed for 12 months under four different conditions.

*Effect of closed assembly time on joint strength in gluing with low-temperature-setting phenol, resorcinol, and melamine glues, by W. Z. Olson, FPL Report 1535, Aug. 1945.

Presents results of shear tests of maple block joints assembled at 70°, 75°, and 90° F., with closed assembly times ranging from 3 to 120 minutes, using 4 room-temperature-setting resorcinol-resin glues, 5 intermediate-temperature-setting phenol-resin glues, and 3 intermediate-temperature-setting melamine-resin glues.

*Effects of elevated curing temperatures on the strength and durability of yellow birch plywood joints made with room-temperature-setting urea glues, by J. M. Black, W. Z. Olson, and H. D. Bruce. FPL Report 1339, Nov. 1945.

Presents results of initial joint tests of yellow birch plywood glued with several cold-setting urea formaldehyde glues, each cured for various lengths of time at temperatures from 80° to 250° F., as well as subsequent joint tests after exposure to several conditions of temperature and moisture over a period of 1 year.

Veneer clipper safety guard, by L. A. Mueller. Timberman 46(12): 100, Oct. 1945; Wood Products 59(10):38,40,42, Oct. 1945.

Describes a guard to prevent accidents in the operation of a veneer clipper. A shield made of a transparent plastic sheet bent to the figure "J," is arranged ahead of the knife to allow good visibility and easy feeding of the veneer, at the same time preventing the operator from getting fingers under the knife.

*Water-resistant glues. FPL Tech. Note F-4, revised Oct. 1945. Contents indicated by title.

Mechanical Properties

*Effect of increased moisture content on the shear strength at glue lines of box beams and on the glue-shear and glue-tension strengths of small specimens, by W. C. Lewis, T. B. Heebink, and W. S. Cottingham. FPL Report 1551, Aug. 1945.

No significant differences in strength were found in box beams, designed to fail by shear at glue lines between flanges and webs when tested at greater moisture contents than when constructed. Similar tests on small specimens showed higher strengths at the higher moisture content in glue-tension but not in glue-shear.

*Methods for testing and evaluating cargo flooring for transport aircraft, by M. P. Brokaw. FPL Report 1550, Apr. 1945.

Contains detailed description of methods of test for evaluating flooring, and presents results for flooring of 10 different types.

Structural timbers for bridge construction in Central America, by J. A. Scholten. Natl. Research Council, Div. Eng. & Indus. Res., Highway Research Board Proceedings 1944:202-206.

Contains information on the characteristics of several species of wood used for bridge construction in Central America. Also includes a discussion of the logging, milling, and manufacturing practices in Central America, and of the possibilities of using this material for structural purposes in the United States.

Packing and Packaging

*Development of a procedure for the determination of the properties of cushioning materials and their application in the design of cushions, by Leon Lassen, K. Q. Kellicutt, and W. J. Sanderson. FPL Report R1489, June 1945.

Discusses the development of a rational procedure for evaluating the properties of cushioning materials for use in packages; and presents procedures for applying these properties to the design of cushions, when the g-factor of the packaged units is known.

Effect of species and thickness of head and type and attachment of cleats upon the strength of slack barrel heads, by E. C. Myers, M. T. Purcell, and R. S. Kurtenacker. Barrel & Box & Packages 50(8):9-13, Aug. 1945; (9):9-12, Sept. 1945.

Presents results of studies on dried skim milk slack

barrel heads (1) of three wood species, (2) of four thicknesses, (3) without cleats, with cleats of three widths, or steel cleats, and (4) 15 methods of fastening wood cleats. Cleats add considerable strength but thicker heads increase strength over the entire head area.

*Influence of temperature on relative humidity within confined spaces with and without a desiccant, by Leon Lassen. FPL Report R1498, Nov. 1945.

An analysis and interpretation of available data on the subject, with and without hygroscopic dunnage.

W5c fiberboard boxes for canned foods, by E. C. Myers. The American Box Maker, 8-10, 18, October 1945; 12-15, 28, Nov. 1945.

W5c fiberboard boxes were only one-third to one-fourth as resistant to rough handling as V-grade boxes, and were affected more by moisture. Tests indicated that W5c boxes should not be used for loads over 45 pounds or cans larger than No. 2-1/2.

Pathology

*Lumber shipped green can be protected against decay, by Carl Hartley. For. Path. Special Release No. 26, Oct. 1945.

Dipping with commercial antistain chemicals kept green, bulk-piled lumber of western species free of apparent decay for as long as a year. Mixtures of sodium pentachlorophenate and borax, and of these combined with ethyl mercuric chloride, were highly effective and caused less skin irritation than the phenate alone.

Preservation

*Fire resistance tests of a commercial blanket insulation, by G. C. McNaughton and Arthur Van Kleeck. FPL Report R1488, July 1945.

When added to hollow, plywood-faced partitions having normal resistance of less than 21 minutes the insulation increased fire-resistance values, but yielded no significant effects in conventional frame walls faced with plaster or gypsum board having normal fire-resistance of more than 40 minutes.

16th Progress Report — International termite exposure test, by G. M. Hunt and T. E. Snyder. AWPAA Proceedings, 1945.

Describes results to date of tests begun in 1930 on 2 by 4 by 18-inch pine stakes treated with various wood preservatives and installed at Barro Colorado Island (Canal Zone), Australia, Hawaii, and South Africa.

Pulp and Paper

*Development of a counterpart vertical fin of papreg for the AT-6 airplane, by E. C. Jungmann. FPL Report 1594, Dec. 1945.

Discusses the construction and testing of a vertical fin for the AT-6 airplane made entirely from papreg except for the plywood core of the skin surface. Fin compares favorably with the aluminum fin.

*Facilities for pulp and paper research at the U. S. Forest Products Laboratory, Madison 5, Wisconsin, by G. H. Chidester. FPL Report R1499, Dec. 1945.

Contents indicated by title.

Hardwoods for groundwood pulp, by E. R. Schafer. TAPPI Bul. (60): 1-2, Oct. 15, 1945.

The depletion of softwood stands in the vicinity of groundwood mills invites consideration of an increase in the use of hardwoods. Broadly, hardwoods may be classified for groundwood pulping into those of lower density and those of higher density. The groundwood pulping characteristics of woods in these classes are briefly mentioned.

*Sulfite pulping of Western redcedar, by E. L. Keller and J. N. McGovern. FPL Report R1494, Nov. 1945.

This species was found difficult to pulp under normal sulfite pulping conditions. By modifications of the process both unbleached and bleached of pulps comparable in strength properties to similar commercial sulfite pulps were obtained. The yield of pulp from Western redcedar is much lower than that obtained from the woods ordinarily used.

Seasoning

*Reducing the hazards of inadequately dried lumber in postwar housing, by L. V. Teesdale. FPL Report R1600, Oct. 1945.

Much of the framing lumber available for immediate construction is unseasoned. Satisfactory results cannot be

expected but certain expedients are suggested that will permit some seasoning during construction and reduce to some degree the objectionable effects of shrinkage.

- *Seasoning, storage, and handling of ship planking and decking: Suggestions to ship and boatbuilders, by E. C. Peck. FPL Report R1606, Oct. 1945.

A brief statement of the testing of ship planking and decking for moisture content, methods of seasoning, handling, and storage; includes illustrations of good and bad practice.

- *Seasoning of transverse tree sections, by E. C. Peck. FPL Report R1187, revised July 1945.

A revision and an expansion of the original, including a table of differences between tangential and radial shrinkage for many species, directions for the use of coatings and chemicals, and instructions for seasoning.

Wood Finishing

- *A survey of the properties of commercial water repellents and related products, by F. L. Browne and L. E. Downs. FPL Report R1495, Nov. 1945.

Approximately 60 commercial products representing water repellents, water-repellent preservatives, wood sealers, and preservative wood sealers were tested by the swellograph method, penetration into end-grain of ponderosa pine sapwood, paint holdout, effect on drying and adhesion of 7 different kinds of coatings, drying characteristics, sludging, solubility in cold acetone, viscosity, flash point, and non-volatile content.

Wood Structure

- Open-grown sugar maple for textile shuttles, by B. H. Paul and M. E. Baudendistel. South. Lhrman., 171(2153):173-76, Dec. 15, 1945

Wood from open-grown sugar maple trees compared favorably with dogwood for textile shuttles in specific gravity, hardness, shear, and smoothness of wear. Average shrinkage in volume of open-grown sugar maple was slightly less than for dogwood.

Variation in the specific gravity of balsa and its relation to longitudinal shrinkage, by J. P. Limbach and B. H. Paul. Tropical Woods (84):18-25, Dec. 1, 1945.

Dry ungraded balsa may range from 3-1/2 to more than 20 pounds per cubic foot. Grade "AA" admits dry balsa below 9 pounds and grade "A" balsa of 9 to 18 pounds per cubic foot. Much grade "AA" balsa was found to be below 6 pounds per cubic foot.

Wood Utilization, Logging, and Milling

*Outlets for wood waste: A general statement of actual and potential uses of various kinds of wood waste. FPL Report R64, revised Aug. 1945.

Lists classes of wood refuse: (1) forest waste, slabs, edgings, and trimmings; (2) bark; (3) shavings and sawdust. Discusses the current status of the more important uses and the part specialized dealers play in wood waste disposal.

Publishers of Trade Journals and Magazines Included in References

American Box Maker, 64 W. Randolph, Chicago, Illinois.

American Wood-Preservers' Assn., 1427 Eye St., NW., Washington 5, D. C.

Barrel & Box & Packages, 431 S. Dearborn St., Chicago 5, Ill.

National Research Council, Division Engineering & Industrial Research, Highway Research Board Proceedings, Washington 25, D. C.

Southern Lumberman, 917 Berryhill St., Nashville 3, Tenn.

TAPPI Bulletin, 122 E. 42nd St., New York 17, New York.

Timberman, 519 SW. Park Ave., Portland 5, Oregon.

Tropical Woods, Yale University School of Forestry, New Haven, Conn.

Wood Products, 431 S. Dearborn St., Chicago 5, Illinois.

